TIMBER BRIDGES IN MARYLAND

Because of the availability of lumber in the state, the timber bridge was a functionally popular bridge type in Maryland from the European settlement era to the twentieth century. The numerous small streams that cross the state as well as the larger rivers such as the Susquehanna were often spanned by timber bridges during the eighteenth and nineteenth centuries.

In 1724, the Maryland General Assembly acted to clarify the rights of the counties to create and maintain bridges. The Assembly empowered county officials,

> as often as need shall require, for the repairing and making of bridges over the heads of rivers, creeks, branches, swamps, or other low and miry places, to cut down, or cause to be cut down, any tree or trees growing on any of the next adjacent land to such bridges necessary to be made or repaired, and the same trees to maul, or caused to be mauled, and carried from off such adjacent lands, and applied to the making and necessary repairs of such bridges as aforesaid [Kilty 1808:November 1724 Session, Chapter 14].

Although the type of timber bridge is not specifically stated in the 1724 law, these bridges were most likely simple beam-type bridges, and king and queen post truss types, which could be constructed rapidly and cheaply over Maryland's small streams and rivers (a 1795 supplement to the 1724 act granted compensation to the owners of the trees taken by the county to construct these small bridges) (Kilty 1808:November 1795 Session, Chapter 37).

In the early nineteenth century, Maryland took advantage of the evolving bridge truss technology. The state's major river crossings attracted significant bridge builders to Maryland. In 1817-1818, Theodore Burr constructed the Rock Run Bridge, an eighteen-span, 4,170-foot, covered Burr arch truss bridge over the Susquehanna at Port Deposit. The bridge burned in 1823 and was rebuilt in 1824 by Louis Wernwag, a native of Germany who became a prominent bridge builder in the United States after his immigration in the late 1700s. Wernwag also constructed the Conowingo Bridge over the Susquehanna River at Conowingo, Maryland, in 1818. This was a seven-span, 1,334-foot, covered, highway bridge that served the local community until 1847 when it was destroyed in a spring freshet.

These bridges represent the most impressive of the covered bridges built in the state. More common, however, were the smaller covered timber bridges, such as the Roddy Road Covered Bridge over Owens Creek in Frederick County, Maryland. Constructed by an anonymous builder, this is a single-span, king-post truss bridge that has stood in its current location since circa 1850. A 1937 survey of the state's covered bridges detailed 52 covered bridges, 35 of which were extant at the time of the survey, including Burr, bowstring, queen-post and king-post truss-type bridges.

Storms, fire, development, and vandalism have reduced this number to seven known covered bridges extant in Maryland today.

Apart from covered bridges, Maryland had an abundance of small uncovered timber bridges of the timber beam and king-post and queen-post truss varieties. An 1899 statewide survey of highway bridges conducted by the Maryland Geological Survey indicated that:

> a majority of the small bridges with spans up to 30 feet, culverts, and drains are of wood. The shortest spans are a simple beam to which is nailed the flooring and rails. For spans from 10 to 30 feet, a simple triangular frame with a central tension rod or post forms the supporting truss [Johnson 1899:205-206].

Many of these small bridges were replaced with metal truss and later with concrete spans, necessary for the growing traffic demands of the industrializing state.

Timber trestle-type railroad bridges were also constructed in Maryland. While constructing the more ornate and complex bridges in urban areas, the Baltimore and Ohio Railroad built the purely functional timber trestle bridges over crossings in its more rural locations. One such example is the B&O bridge over Antietam Creek constructed in about 1867. This timber trestle bridge, which is nearly 400 feet in length, was originally constructed to serve the Washington County Branch of the B&O Railroad and is believed to be the longest timber trestle built by the railroad company.

Despite the rise of use of metal and concrete in bridge building, timber bridges continued to be constructed in Maryland in the twentieth century. Many of these later timber bridges were timber and concrete composite structures favored in the flat terrain of the Tidewater region. Such timber-and-concrete composite structures were evidently introduced in Maryland by the State Roads Commission engineers, who kept abreast of early twentieth century trends in composite bridge design. In the 1937-1938 *Report of the State Roads Commission*, Bridge Division Chief Engineer Walter C. Hopkins acknowledged professional interest in such structures:

> The bridges constructed have been varied, with miscellaneous types and of different materials. Bridges have been built of concrete, steel, timber, or stone, or combinations thereof. Careful study is given the employment of those materials most satisfactorily adapted to the structure in question. Balance, proportion and treatment that will result in simplicity, gracefulness and pleasing appearance are always considered and sought by the designer [Maryland State Roads Commission 1938:71].

The Bridge Division's earliest timber-and-concrete composite bridges were built in 1937-1938 in Tidewater Maryland. Three such bridges were constructed in Wicomico County, and one each in Calvert, St. Mary's, Queen Anne's, Kent, and

Caroline counties. Pictured in the 1937-1938 State Roads Commission report, the longest such bridge was "a timber and concrete composite bridge of twelve 20-foot spans, providing a clear roadway of 26 feet, and two 3-foot, 1-inch sidewalks, over Tony Tank Pond, on the road from Salisbury to Princess Anne near Salisbury, Wicomico County" (Maryland State Roads Commission 1938:83).

Subsequent State Roads Commission reports refer to additional timber-concrete composite bridges constructed under state authority between 1939 and 1960, primarily at Tidewater (Coastal Plain) sites on the Eastern Shore and in Southern Maryland (Maryland State Roads Commission 1939a:71, 1943:45). In 1947, Bridge Division engineers observed that "the development of the composite use of timber and concrete has permitted the design of economical structures with the general appearance from the roadway of a much more costly bridge" (Maryland State Roads Commission 1947:53).